In the Claims:

Please amend the claims as follows:

1-40 (cancelled)

41. (new) A method in a diffractive color system that specifies target colors that are formed by additively mixing together two or more diffractively produced primary colors, the method comprising:

forming an application-specific group of primary color candidates, to which group primary color candidates are selected by using as a main selection criterion a luminance reached with them in application-specific illumination conditions in question;

selecting at least two primary colors from said group of primary color candidates so that said target color is located in the color space on an area, which can be covered by additively mixing together said selected primary colors; and

determining a target-color-specific mixing ratio for these selected primary colors, so that said target color is achieved in the application-specific illumination conditions by additively mixing the selected diffractively produced primary colors at said mixing ratio.

42. (new) The method according to claim 41, further comprising:

selecting the primary color candidates to correspond to spectral features distinguishable in the spectrum of illumination.

43. (new) The method according to claim 42, further comprising:

selecting the primary color candidates to correspond to the strongest spectral bands or lines of light emitted by a fluorescent lamp.

44. (new) The method according to claim 43, further comprising:

selecting the primary color candidates to correspond substantially to the wavelengths of 437 nm, 490 nm, 545 nm and 615 nm.

45. (new) The method according to claim 42, further comprising:

selecting the primary color candidates to correspond to spectral bands or lines distinguishable in the illumination implemented by means of semiconductor emitters.

46. (new) The method according to claim 41, further comprising:

designing for each primary color candidate a diffractive elementary grating, which grating is formed on a substrate and which grating is adapted to reproduce said primary color.

47. (new) The method according to claim 46, further comprising:

forming a diffractive basic area unit on the substrate in order to reproduce a target color, said basic area unit being formed of the elementary gratings corresponding to the primary colors selected for said target color.

48. (new) The method according to claim 47, further comprising:

coding the mixing ratio of the primary colors selected for said target color in said basic

area unit to the area ratios of the elementary gratings corresponding to the primary colors.

49. (new) The method according to claim 47, further comprising:

taking into account the color of the substrate when specifying said primary color mixing ratio.

50. (new) The method according to claim 47, wherein said basic area unit is formed of the elementary gratings as an array-like pixelated structure, in which an individual elementary grating represents an individual pixel.

51. (new) The method according to claim 50, wherein the dimensions of said basic area unit in all directions along the plane of the substrate are selected to be substantially equal.

52. (new) The method according to claim 47, wherein said basic area unit is formed of elementary gratings as a banded pixelated structure.

53. (new) The method according to claim 52, wherein the dimension of said basic area unit in at least one direction along the plane of the substrate is selected to be substantially greater than the dimensions of the basic area unit in the other directions along the plane of the substrate.

54. (new) A diffractive color system that specifies target colors that are formed by additively mixing together two or more diffractively produced primary colors, wherein the target colors contained in the color system are specified

by forming an application-specific group of primary color candidates, to which group the primary color candidates have been selected by using the luminance reached with them in the application-specific illumination conditions in question as a main selection criterion,

in order to produce a specific target color, at least two primary colors have been selected from said group of primary color candidates in such a manner that said target color is located in the color space on an area, which can be covered by additively mixing together said selected primary colors, in which case

a target color specific mixing ratio has been determined for the target color selected in this way, so that said target color is achieved in application-specific illumination conditions by additively mixing the selected primary colors at said mixing ratio, and

information on the primary colors selected to produce said target color and on their mutual mixing ratios is stored.

55. (new) The color system according to claim 54, wherein in order to reproduce a specific target color, a diffractive basic area unit is further specified, which unit comprises elementary gratings reproducing the primary colors selected for said target color, the mutual area ratios of which elementary gratings have been selected to correspond to the mixing ratio of the primary colors determined for producing the target color, and wherein information on the characteristics of said basic area unit producing the target color in question and the elementary gratings contained in it is stored in a target color-specific manner.

56. (new) The color system according to claim 54, wherein information contained in the color system is presented as a multi-dimensional color chart.

57. (new) A diffractive component, comprising:

at least one diffractive basic area unit formed on a substrate, which basic area unit is arranged to create a target color by additively mixing together two or more diffractively produced primary colors,

said basic area unit comprising at least two different diffractive elementary gratings producing different primary colors in at least one common detection direction,

the primary colors being selected by using a luminance achieved with them in application-specific illumination conditions as a selection criterion,

an area ratio of said elementary gratings corresponding to a mixing ratio of the selected primary colors, and said target color being provided by additively mixing said primary colors at said mixing ratio.

58. (new) The diffractive component according to claim 57, wherein the primary colors corresponding to the elementary gratings contained in at least one basic area unit contained in the component are selected from a group of primary color candidates, which primary color candidates correspond to spectral features distinguishable in an application-specific illumination comprising a discrete spectrum.

59. (new) The diffractive component according to claim 58, wherein said primary color candidates correspond to the strongest spectral bands or lines emitted by a fluorescent lamp.

60. (new) The diffractive component according to claim 59, wherein the primary color

candidates correspond substantially to the wavelengths of 437 nm, 490 nm, 545 nm and 615 nm.

61. (new) The diffractive component according to claim 58, wherein said primary color candidates correspond to the spectral bands or lines distinguishable in an illumination implemented with semiconductor emitters.

62. (new) The diffractive component according to claim 57, wherein the area ratios of the elementary gratings have been determined by taking into consideration the color of the substrate.

63. (new) The diffractive component according to claim 57, wherein said basic area unit producing the target color is formed of the elementary gratings as a array-like pixelated structure, in which an individual elementary grating represents an individual pixel.

64. (new) The diffractive component according to claim 63, wherein the dimensions of said basic area unit in all directions along the plane of the substrate are substantially equal.

65. (new) The diffractive component according to claim 57, wherein said basic area unit producing the target color is formed of elementary gratings as a banded pixelated structure.

66. (new) The diffractive component according to claim 65, wherein a dimension of said basic area unit in at least one direction along the plane of the substrate is selected to be substantially greater than the dimensions of the basic area unit in the other directions along the

plane of the substrate.

67. (new) The diffractive component according to claim 57, wherein said elementary gratings are implemented as surface grating structures.

68. (new) The diffractive component according to claim 57, wherein the profiles of the gratings of said elementary gratings are selected from a group consisting of a binary profile, a sine-form profile , a triangle profile, and combinations thereof.

69. (new) The diffractive component according to claim 57, wherein the viewing angle α of the elementary gratings has been arranged to be 30° in a situation in which the illumination takes place substantially in the direction of the normal of the plane of the substrate.

70. (new) The diffractive component according to claim 57, wherein said elementary gratings have been formed on the substrate by embossing.

71. (new) The diffractive component according to claim 70, wherein embossing has been performed as sheet printing.

72. (new) The diffractive component according to claim 57, wherein said substrate is formed of one or more materials selected from a group consisting of plastic, paper, cardboard, glass, textile, metal, ceramics, lacquer, paint, and printing ink.

73. (new) A product adapted to provide one or more visual and diffractively produced color effects, said product comprising:

at least one diffractive component, which diffractive component in turn comprises at least one diffractive basic area unit formed on a substrate, which basic area unit is arranged to create a target color by additively mixing together two or more diffractively produced primary colors, said basic area unit comprising at least two different diffractive elementary gratings producing different primary colors in at least one common detection direction, the primary colors being selected by using a luminance achieved with them in application-specific illumination conditions as a selection criterion, an area ratio of said elementary gratings corresponding to a mixing ratio of the selected primary colors, and said target color being provided by additively mixing said primary colors at said mixing ratio.

74. (new) The product according to claim 73, wherein the product is packing material.

75. (new) The product according to claim 73, wherein the product is a printed product.

76. (new) The product according to claim 73, wherein the product is manufactured of a substantially transparent material.

77. (new) The product according to claim 73, wherein the basic material of said product functions at the same time as the substrate of said one or more diffractive component.

78. (new) The product according to claim 73, wherein said one or more diffractive

components form an image as an effect which has one or more colors.

79. (new) The product according to claim 73, wherein said one or more diffractive components form letters as an effect which has one or more colors.

80. (new) The product according to claim 73, wherein said one or more diffractive components form a color specimen representing the target color specified by a diffractive color chart.